

Continuation Application of
Serial No. 09/026,085
Preliminary Amendment

IN THE CLAIMS:

Please cancel claims 1-73.

Please consider the following new claims 74-106, as attached in clean form.

Continuation Application of
Serial No. 09/026,085
Preliminary Amendment

Clean Version of Pending Claims 74-106

74 (New). An apparatus to treat a sphincter, comprising:
a support member;
a sphincter electropotential mapping device having a deployed state and a non-deployed state, the mapping device including a plurality of coupled arm members having sufficient spring force to substantially maintain an arm member camber when the mapping device is in the deployed state and in contact with the sphincter, a mapping electrode coupled to the plurality of coupled arm members, the sphincter electropotential mapping device being coupled to the support member and configured to detect one of an aberrant neuroelectric or myoelectric activity of one of the sphincter or an adjoining tissue; and
a treatment electrode coupled to the plurality of arm members, the treatment electrode being advanceable into an adjoining tissue to deliver energy to cause cell injury.

75 (New). The apparatus of claim 74, wherein the treatment electrode is configured to create a lesion in the lower esophageal sphincter.

76 (New). The apparatus of claim 75, wherein the lesion reduces a frequency of reflux of stomach contents into an esophagus.

77 (New). The apparatus of claim 75, wherein the lesion reduces a frequency of a symptom of reflux of stomach contents into an esophagus.

78 (New). The apparatus of claim 75, wherein the lesion reduces an incidence of a sequela of reflux of stomach contents into an esophagus.

79 (New). The apparatus of claim 75, wherein the lesion reduces a duration of lower esophageal sphincter relaxation.

80 (New). The apparatus of claim 74, wherein the mapping device is configured to be positionable within a lower esophageal sphincter.

81 (New). The apparatus of claim 74, further comprising:

a feedback control device coupled to the sphincter electropotential mapping device.

82 (New). The apparatus of claim 74, further comprising:

an energy source coupled to the treatment electrode and a feedback control device coupled to the energy source.

83 (New). The apparatus of claim 74, wherein the sphincter electropotential mapping device includes a plurality of mapping electrodes and a plurality of treatment electrodes distributed on a surface of the support member.

84 (New). The apparatus of claim 83, wherein the plurality of mapping electrodes and the plurality of treatment electrodes are radially distributed along a surface of the support member.

85 (New). The apparatus of claim 83, wherein the plurality of mapping electrodes and the plurality of treatment electrodes are longitudinally distributed along a surface of the support member.

86 (New). The apparatus of claim 74, wherein the sphincter electropotential mapping device covers a portion of a surface of the support member.

87 (New). The apparatus of claim 74, wherein the sphincter electropotential mapping device covers substantially all of an exterior surface of the support member.

88 (New). The apparatus of claim 74, wherein the sphincter electropotential mapping device is sized to be positionable in a sphincter and allow the sphincter electropotential mapping device to contact at least a portion of an internal surface of the sphincter.

89 (New). The apparatus of claim 74, where the sphincter electropotential mapping device is sized to be positionable in the sphincter and non-permanently dilate the sphincter.

Continuation Application of
Serial No. 09/026,085
Preliminary Amendment

90 (New). An apparatus to treat a stomach, comprising:

a support member;

a stomach electropotential mapping device having a deployed and a non-deployed state, the mapping device including a plurality of coupled arm members having sufficient spring force to substantially maintain an arm member camber when the mapping device is in the deployed state and in contact with the stomach, a mapping electrode coupled to the plurality of coupled arm members, the stomach electropotential mapping device being coupled to the support member and configured to detect one of an aberrant neuroelectric or a myoelectric activity of the stomach; and

a treatment electrode coupled to the plurality of arm members, the treatment electrode being advanceable into an adjoining tissue to deliver energy to cause cell injury.

91 (New). The apparatus of claim 90, wherein the stomach electropotential mapping device is configured to detect one of an aberrant neuroelectric or a myoelectric activity of a stomach cardia.

92 (New). The apparatus of claim 90, wherein the treatment electrode is configured to create a lesion in the cardia of the stomach.

93 (New). The apparatus of claim 92, wherein the lesion reduces a frequency of reflux of stomach contents into an esophagus.

94 (New). The apparatus of claim 92, wherein the lesion reduces a frequency of a symptom of reflux of stomach contents into an esophagus.

95 (New). The apparatus of claim 92, wherein the lesion reduces an incidence of a sequela of reflux of stomach contents into an esophagus.

96 (New). The apparatus of claim 90, further comprising:

a feedback control device coupled to the stomach electropotential mapping device.

97 (New). The apparatus of claim 90, further comprising:

an energy source coupled to the treatment electrode, and a feedback control device coupled to the energy source.

98 (New). The apparatus of claim 90, wherein the stomach electropotential mapping device includes a plurality of mapping electrodes and a plurality of treatment electrodes distributed on a surface of the support member.

99 (New). The apparatus of claim 98, wherein the plurality of mapping electrodes and plurality of treatment electrodes are radially distributed along a surface of the support member.

100 (New). The apparatus of claim 98, wherein the plurality of mapping electrodes and the plurality of treatment electrodes are longitudinally distributed along a surface of the support member.

101 (New). The apparatus of claim 90, wherein the stomach electropotential mapping device covers at least a portion of a surface of the support member.

102 (New). The apparatus of claim 90, wherein the stomach electropotential mapping device covers substantially all of an exterior surface of the support member.

103 (New). The apparatus of claim 90, wherein the stomach electropotential mapping device is sized to be positionable in a stomach and allow the stomach electropotential mapping device to contact at least a portion of an interior surface of the stomach.

104 (New). An apparatus to treat a sphincter comprising:
a support member,
a sphincter electropotential mapping device including a mapping electrode, the sphincter electropotential mapping device being coupled to the support member and configured to be positioned within a sphincter and detect one of an aberrant neuroelectric or myoelectric activity of the sphincter, at least one of the mapping device or the support member being steerable, and

a treatment electrode coupled to the mapping device, the treatment electrode being advanceable into an adjoining tissue to deliver energy to cause cell injury.

105 (New). An apparatus to treat a sphincter and adjoining tissue comprising:
a support member,

B1
a sphincter electropotential mapping device comprising a plurality of coupled arm members having a longitudinal axis, at least one arm member having a lumen, a mapping electrode coupled to the plurality of arm members, the sphincter electropotential mapping device being coupled to the support member and configured to be positioned within a sphincter and detect one of an aberrant neuroelectric or myoelectric activity of the sphincter and adjoining tissue, and

a treatment electrode coupled to the mapping device, the treatment electrode being advanceable into an adjoining tissue to deliver energy to cause cell injury.

106 (New). The apparatus of claim 105, wherein the at least one arm member lumen is configured for advancement and retraction of the treatment electrode and the treatment electrode is advanceably coupled to the at least one arm member lumen.